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City of Branson

Purchasing Office

110 W. Maddux St., Suite 200

Branson, MO

Attn: David D Rockhill

Proposal No. 2493-25

Date and Time Due: June 25th, 3:00 PM

**REQUEST FOR QUALIFICATIONS
PRESENTED BY: GREAT RIVER ENGINEERING**

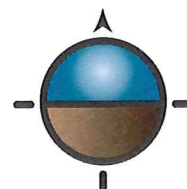
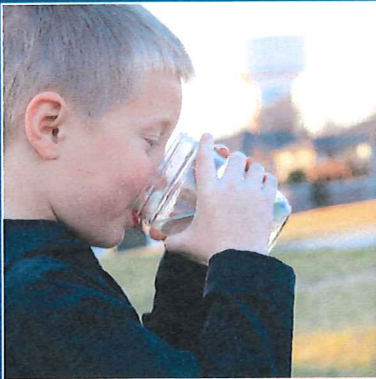
**CITY OF BRANSON
LIFT STATION 17 FORCE MAIN & SPRING CREEK
NEIGHBORHOOD WATER AND SEWER
PROPOSAL NUMBER 2493-25**

JUNE 25, 2019

417.886.7171

2826 S. Ingram Mill Rd., Springfield MO 65804

www.greatriv.com



GRE
GREAT RIVER
ENGINEERING



City of Branson
Attn: David Rockhill, C.P.M
110 W. Maddux St., Suite 200
Branson, MO 65616

June 25, 2019

Re: Request for Professional Engineering and Design Services Proposal Number 2493-25

Dear Mr. Rockhill,

Congratulations on taking the next steps in continuing to improve the reliability of the wastewater collection system for the City of Branson and improving the wastewater and water service to a currently underserved area of your City. Having a reliable and efficient system not only saves the City money but also ensures that the needs of the community are met.

GRE has had the opportunity to work together with the City of Branson on numerous projects. We are excited to grow our working relationship and bring our expertise in sewer collection and conveyance and water supply systems to this project. Our extensive experience in working in the Branson area helps us limit the number of surprises that can come up when working in our area's unique soil conditions, difficult terrain, and past developments which were constructed with lower standards than today's. We have also worked with most of the major contractors that will be performing this work and those relationships can help minimize field issues.

Overall as a company we are in our 22nd year of providing water and wastewater design and construction services. We have been able to deliver successful projects for many of the communities across the State. The key to our ability to deliver successful project is as follows:

- **Keeping Clients well informed through effective communication**
- **Proven record of performance in both schedule and control of costs**
- **Capacity to quickly begin and deliver projects**
- **Ability to bring innovative ideas and solutions**

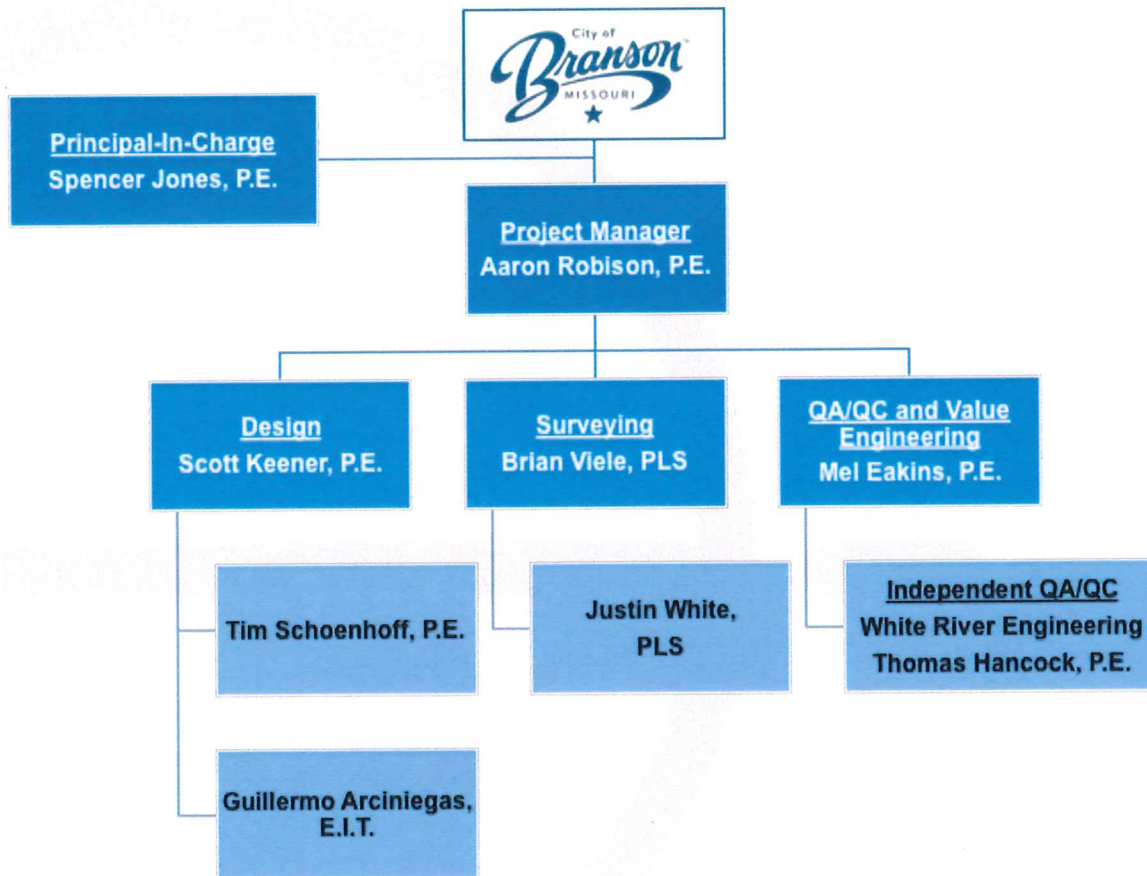
Our entire project team is excited to deliver more successful projects to the City of Branson. If you have any questions please feel free to call me anytime at 417.886.7171.

Sincerely,

A handwritten signature in black ink, appearing to read "Spencer Jones". The signature is stylized with a large, looped "S" and a distinct "J".

Spencer Jones, P.E.
Principal:

We have assembled a great team for this project! Our team is the premier linear sewer and water team in the region. The organizational chart below introduces you to our great team. The staff below have worked together on multiple projects and will provide a seamless project delivery.



PROJECT ORGANIZATION CHART

As shown in the organization chart above, the City is the leader of the project, and our Project Manager will report directly to you. Aaron will coordinate the activities and of the project team and will be your primary point of communication and accountability. The following pages introduce our key team members, and then provide example projects that our team has worked on in the last 5 years including client references.

White River Engineering, Inc. will be engaged to provide independent review of the design and analysis of the proposed force main and water and sewer system improvements, and perform quality control and value engineering reviews, and provide support during the bidding and construction phase.

PROJECT TEAM



Aaron Robison, P.E. ENV SP
Project Manager

Aaron is the Water Team Lead for Great River Engineering. For this project Aaron will serve as the overall team project manager. In this role he will be your main point of contact and ensure that the project team performs as a cohesive unit in delivering this project on time while meeting the main project goals. He has been involved in all phases of water and wastewater projects for over 18 years, primarily in the Midwest, including water and wastewater treatment plants, water supply, water distribution, and sanitary and storm water collection systems.

Scott Keener, P.E., Design Team Lead

Scott will lead the design team for the project. Scott has extensive experience in delivering sewer collection, and conveyance projects. Scott has intimate knowledge of the unique design requirements associated with doing linear sewer work in Southwest Missouri. He has been the project manager on the last three major projects we have done for Taney County Regional Sewer District (TCRSD) included in the Project Experience section below.



Tim Schoenhoff, P.E., Spring Creek Water and Sewer Lead



Timothy is a professional engineer, specializing in water/wastewater hydraulics and treatment. He has experience with civil site development, sanitary sewer collection and treatment, potable water treatment and distribution, hydrologic and hydraulic evaluations, cost estimating, and plan review. Timothy is a Project Engineer that has experience bringing projects from concept to completion while providing excellent client contract.

Thomas Hancock, P.E., Independent QA/QC and Value Engineering

Thomas has 24 years of project management, computer aided design and hydraulic analysis software experience. Richard and Thomas have worked jointly on numerous successfully completed potable water supply distribution and wastewater collection projects during their careers from initial conception through funding, design, permitting, construction and initial operation.



Mel Eakins, P.E., QA/QC Lead

Mel's experience includes performing engineering studies, analyses, and design for public and private infrastructure projects. His technical strengths include water and wastewater design, hydraulic analysis, civil and site design, storm water design, and cost estimating. He routinely serves as project manager, with responsibility for meeting budget, schedule, and quality objectives. On this project Mel will serve as a technical resource during design and then will lead the QA/QC process at each phase of the project.

PROJECT EXPERIENCE

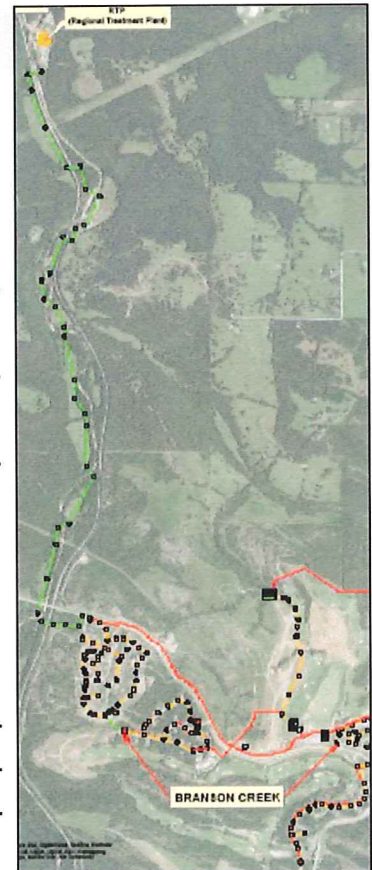
The following projects are just a small sampling of relevant projects that we have delivered in the last five years. These projects were selected as they have some components that are significant to this project and its specific needs.

Turkey Creek Sewer Interceptor (Taney County Regional Sewer District (TCRSD))

Reference: Brad Allbritton, TCRSD, Administrator
(417) 546-1410

Key Team Members: Aaron Robison, PM; Scott Keener, EM;
Mel Eakins, CD; Tim Schoenhoff, PE; Brian Viele, Survey

Great River is currently finishing the design of this important project to connect multiple communities and developments to the City of Hollister WWTF. It will provide a centralized sewer collection and treatment system for properties currently being served by individual septic systems, will eliminate multiple private wastewater treatment systems and several submersible lift stations. It includes the following components: approximately 19,000 linear feet of 27-inch gravity main sewer, 4,100 linear feet of 4" force main sewer, upgrades to two existing submersible nonclog lift stations, the construction of one 20 hp submersible nonclog lift station, 60 manholes and associated sewer related improvements. This project consists of approximately 10 stream and railroad crossings and will include extensive stream bank stabilization as part of the design.



Creighton, Missouri - Water System

Reference: Jeana Walz, CAP, City Clerk, City of Creighton (660) 449-2210

Key Team Members: Mel Eakins, PM; Tim Schoenhoff, PE; Brian Viele, Survey

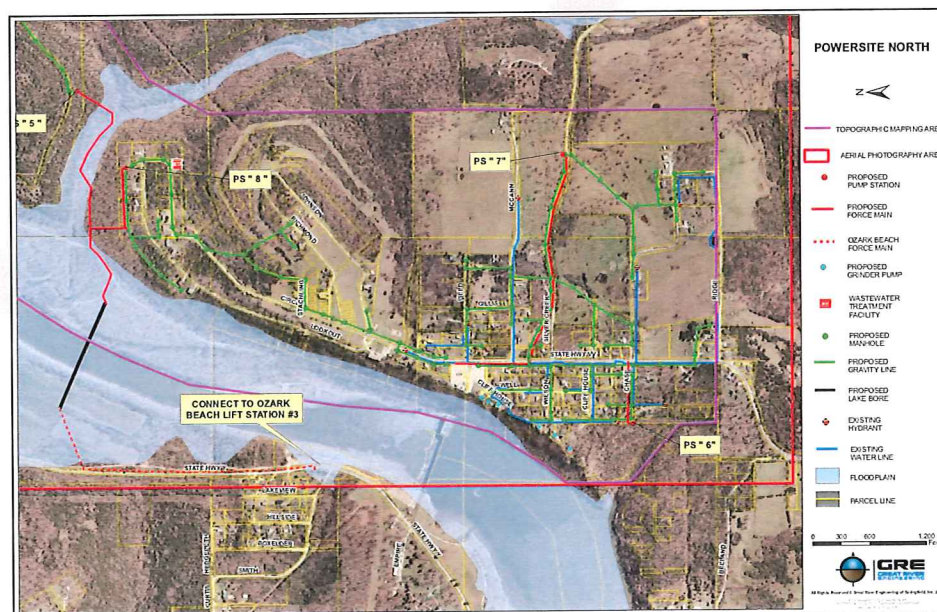
The city of Creighton hired GRE to completed a full distribution replacement for the community. This included over 25,000 feet of main and service lines to be replaced. The existing system was comprised of multiple sizes and material types that was placed in service over the last 60 years. We helped the community through the federal aid process, working closely with MARC, to help fund this project. The project recently bid 15% under budget with construction starting in June 2019.

Powersite North Wastewater - Phases 1&2 (TCRSD, Powersite, MO)

Reference: Brad Allbritton, Taney County Regional Sewer District, Administrator (417) 546-1410

Key Team Members: Scott Keener, EM; Mel Eakins, CD;; Brian Viele, Survey

The project provides centralized sewer collection and treatment for properties previously served with septic systems, failing lagoons and other treatment facilities. Phase 1 of the project included 34,500 linear feet of gravity and force main sewer, one 72 hp submersible non-clog lift station, one 11 hp submersible non-clog lift station, a central collection station, approximately 3,500 linear feet of low-pressure sewer, 175 manholes and associated sewer related improvements. Phase 2 of the project consists of the following components: approximately 30,000 linear feet of gravity and forcemain sewer, one 23 hp submersible non-clog lift station, one 11 hp submersible non-clog lift station, 150 manholes and associated sewer related improvements.



Mildred Wastewater Improvements (TCRSD, Kirbyville, MO)

Reference: Brad Allbritton, TCRSD, Administrator (417) 546-1410

Key Team Members: Scott Keener, PM; Mel Eakins, CD; Tim Schoenhoff, PE; Brian Viele, Survey

This project is located immediately east of Kirbyville, Missouri. Currently under construction, the project will provide a centralized sewer collection and treatment system for properties currently being served by individual septic systems and will eliminate four private wastewater treatment systems. It consists of the following components: approximately 19,000 linear feet of gravity and force main sewer, one 20 hp submersible non-clog lift station, one 7 hp submersible non-clog lift station, 70 manholes and associated sewer related improvements.

City of Mansfield Water System Improvements

Reference: Hank Flageolle, City of Mansfield Public Works Director (417) 924-7063

Key Team Members: Aaron Robison, PM; Tim Schoenhoff, EM; Brian Viele, Survey; Mel Eakins, QA/QC

The City of Mansfield Water System Improvements Project included approximately 18,250 linear feet of water distribution mains replaced or added, installation of an 85,000-gallon stand-pipe water tower, and rehabilitation of an Ion Exchange Lead Removal System. The City of Mansfield, MO became aware of several issues with their existing water distribution system. Those included high levels of water loss, an inability to service the single water storage tower, and a lessening of efficiency of their lead removal system. As part of the project, a study was conducted to determine that the majority of the water loss was due to very old sections of pipe within the City. Those water mains are to be replaced as part of this project. The new stand-pipe water tower will allow the City to shutdown the existing water storage tower for maintenance. The ion exchange media is to be replaced and the tank refurbished to increase lead removal efficiency.

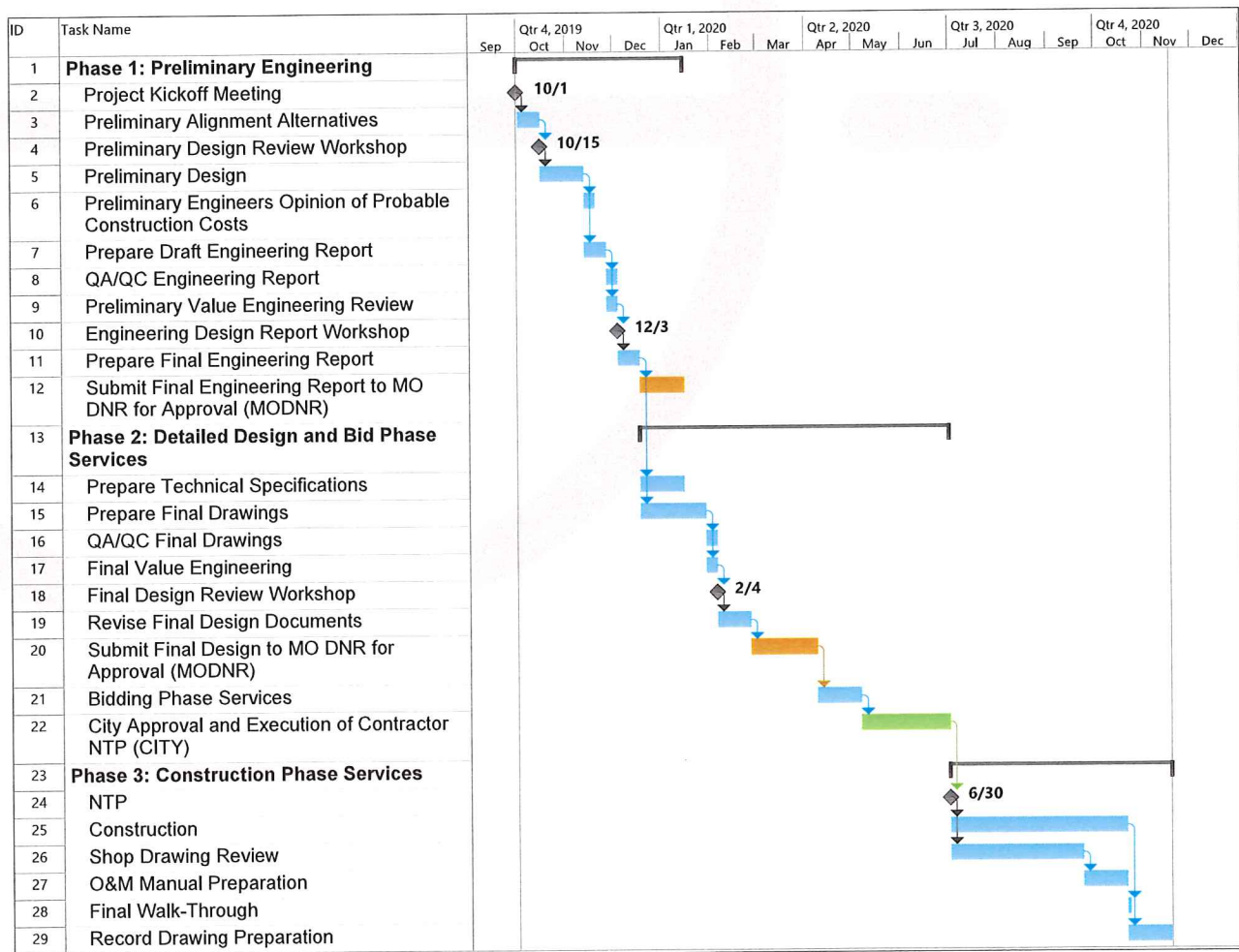
These five (5) projects represent just a sample of recent projects that we have successfully delivered in the water and wastewater field. These projects are some of the larger projects and show that we can successfully handle large and complex projects. We have also performed multiple smaller projects, the experience from all size projects will benefit Branson and this project.

DESIGN COMPLETION ON SCHEDULE

COMPLETION ON SCHEDULE

In the figure below please find our preliminary schedule outlining the entire design and construction process. *During the project kickoff meeting we will discuss the schedule in detail and make any changes required based on feedback at the meeting.* We will then resource load the project and baseline it. The schedule will be updated weekly and will be used to track actual progress of the project as well as plan resources. With each monthly invoice and progress report we will include an updated schedule showing actual versus planned status. We will also use the schedule to generate earned value reports.

The scheduling tool is Microsoft Project and is our standard project controls scheduling software. Used as part of our overall PMP, the scheduling process helps ensure the project comes in on schedule and that if tasks start to go over on time the team is immediately aware. The five (5) projects listed in our Experience section all utilized our PMP project controls tool to come in on schedule



PAST PROJECTS ON BUDGET

Work Plan

The key to bringing a project in on budget and schedule is to develop a great plan and schedule and then work to that plan. Our standard project management practice is to develop a Project Management Plan (PMP) at the beginning of every project. Our PMP is a detailed document that outlines the individual roles, milestones and client goals for the project as well as quality control process. This document creates a road map for success for all team members while helping to ensure project milestones, client goals, and quality are met. The PMP also helps to distribute workload across GRE to ensure each project gets the time devoted to it required to successfully complete.

Clearly Defines:

- **Team Member Roles and Contact Information**
- **Scope of Services**
- **Resource and Cost Loaded Schedule**
- **Key Coordination Items requiring City Input**
- **Quality Control**

The Work Plan is critical to the success of the project and will be utilized by all team members throughout the project to ensure the project is delivered on time and budget while meeting the project objectives.

Control of Construction Costs

Great River Associates has a historical average of +/- 0.5 percent in construction related change orders. We are able to achieve this low percentage by placing a great deal of emphasis on documenting existing field conditions, preparing good plans and specifications, and checking our construction quantity estimates. The table below presents several recent projects, their design fee, the Engineers Opinion of Probable Construction Cost (EOPCC), lowest bid and average bid. As you can see we are able to provide accurate EOPCC's especially in this region due mainly to the large volume of work that we do and the records we keep of current construction costs and trends.

Project	Design Fee	EOPCC	Low Bid	Average Bid
Mildred Phase 1 (2017)	\$ 309,712	\$ 3,012,744	\$ 2,777,363	\$ 3,094,827
Powersite Phase 2 (2017)	\$ 647,130	\$ 5,299,032	\$ 3,689,093	\$ 4,683,383
Mansfield Water System (2018)	\$ 219,915	\$ 2,074,319	\$ 2,307,515	\$ 2,317,411
Creighton Water System (2018)	\$ 99,900	\$ 1,236,396	\$ 1,081,489	\$ 1,595,191
Strafford Route 66 Water Line (2017)	\$ 19,000	\$ 183,050	\$ 125,975	\$ 183,553

QUALITY ASSURANCE/QUALITY CONTROL

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Our process for this project includes both in house and outside review prior the client submittals. The team brings a deep level of experience that allows for this. All of this will be done locally between our GRE staff and our partner White River. The QA/QC process will be based around our project management plan and help to ensure that the project stays on target.

By following our process, we have had an average of +/- 0.5 percent in construction related change orders. We are able to achieve this low percentage by placing a great deal of focus on quality review.

GRE Quality Control Plan

Included in the Project Management Plan (PMP) will be the quality control plan specific to this project. The Quality Control Plan identifies all roles and responsibilities of each team member in the QA/QC process and outlines specific deliverables and schedule dates for QA/QC reviews. Each monthly progress report submitted to the City will include status and updates of the QA/QC program.

Our Pledge

Our drive for quality is centered around our pledge to our clients, "To keep our Clients informed on the status of their projects." This ensures that the desires of the client are met, while meeting the quality expectations laid out by them throughout the project. By keeping this pledge in mind throughout the project, quality improvements can be continuously made.

Great River Defines Quality Control:

Actions to catch defects; the independent checking of work and use of controls to ensure a high level of confidence that each project will meet expectations.

PROJECT APPROACH: This project is comprised of three main utility design components as indicated below and shown in the figure on the next page:

1. Lift Station No. 17 Force Main. The project will replace and upsize the existing force main from Lift Station No. 17 to a gravity sewer manhole at the end of Dakota Road. The existing 12" PVC force main is prone to breakage and the current alignment makes maintenance and repairs extremely difficult and costly. The new force main will be of adequate materials to ensure less breaks and the alignment will be routed through areas where access for maintenance will be easier for City staff. At a minimum in areas of development the pipeline will be ductile iron.

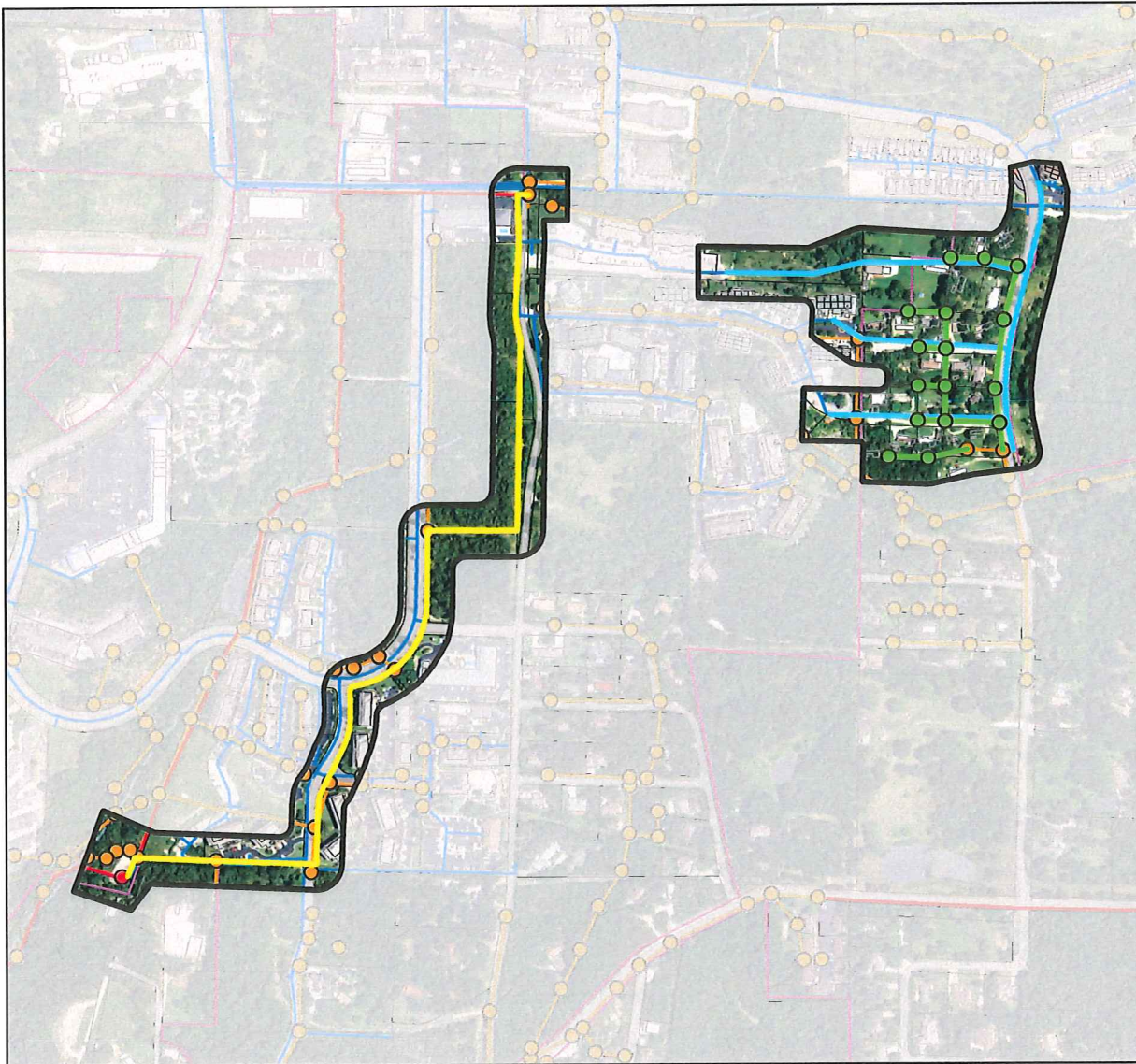
2. Spring Creek Neighborhood Water System Upgrades. The current water supply system for the Spring Creek neighborhood is undersized and not capable of providing enough fire flow and reliable potable water supply. The water system upgrades will bring the system up to current City standards and will:

- a. Provide adequate fire flow and reliable potable water supply to the Spring Creek neighborhood
- b. Provide system looping and redundancy from the Thousand Hills subdivision through Spring Creek to the Palace View subdivisions. Initial plan is to tie into the Thousand Hills water mains as the pressure zone is at a similar level to the Spring Creek area.
- c. Provide service for annexed areas of the City not currently served.

3. Spring Creek Neighborhood Sanitary Sewer System Upgrade. The sanitary sewer system in Spring Creek is currently a private system of inadequate size. This project will bring the system up to City standards and insure adequate capacity for the Neighborhood. The current 4" gravity lines will be upgraded to standard 8" lines for tying into the public sewer in Spring Creek Road and will be easily accessible for maintenance by City crews.

Phase 1: Preliminary Design: Existing available contour topographic and GIS data will be utilized to produce initial topographical drawings. A computer-generated surface model of the project area will be developed from this data.

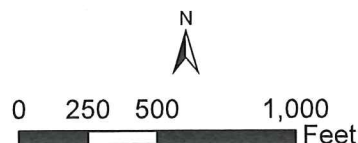
The preliminary design phase will produce preliminary plan and profile drawings showing Lift Station No. 17 force main, sanitary sewer and water main alignments. The design team will utilize the base map and surface model in conjunction with field observations to select preliminary alignments and prepare site plans. Facility locations will be evaluated for maintenance access, conflict with existing utilities, geotechnical considerations, and any planned



Legend

- Branson City Limits
- Parcels
- Existing System**
 - Existing Lift Station
 - Existing Manhole
 - Existing Force Main
 - Existing Gravity Main
 - Existing Water Main
- Proposed Infrastructure**
 - Proposed Manhole
 - Proposed Force Main
 - Proposed Gravity Main
 - Proposed Water Main

LIFT STATION 17 FORCE MAIN REHAB & SPRING CREEK NEIGHBORHOOD WATER & SEWER



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development. During this time, we will meet with the City periodically to review the project status and get input to key decisions to ensure the City is fully informed and concurs with the proposed design alternatives.

The design will take into account that the existing force main must remain in operation during the entire project. Also, water and sanitary sewer service to the Spring Creek neighborhood must not be interrupted during construction of the project.

Lift Station No.17 Force Main: Alternative alignments will be checked to confirm the most efficient and effective alignment. From initial analysis, the alignment presented in the RFQ appears to provide the most accessible, best use of existing easements, and cleanest route. The preliminary alignment may also allow a portion in the undeveloped areas to be installed with C900 pipe which would represent a price savings. We will provide a cost/benefit analysis for use of different pipe materials during preliminary engineering. We will also run the hydraulics of the new alignment and confirm pipe sizes and operation.

Spring Creek Water System Upgrades: A computer-generated hydraulic model of the project area will be prepared in the Bentley Systems 2019 WaterCad environment. Data from the City's existing water distribution model and record drawings at connection points will be verified and then incorporated into the new model. Hydrant flow tests will be conducted at proposed connection points to verify existing data and calibrate the new model.

Spring Creek Sanitary Sewer System Upgrades: Preliminary layout of the sewer lines will be prepared and checked with the City to confirm adequate access.

A preliminary cost estimate for the preferred alternatives will be prepared to determine the most economical alternative. A value engineering review will then be conducted by one of our senior engineers to ensure that the project is delivering the best value for the City.

Phase 2: Final Design and Bid Phase Services:

Final Design: The final design phase will encompass preparation of: final plan and profile drawings, site plans, standard appurtenances drawings, other standard drawing details, contract documents and technical specifications, and any necessary permit applications for submission to authorities having jurisdiction over the project.

As part of the process we will finalize the details of all force main, water distribution and sanitary sewer collection system designs including plans and profiles and technical specifications. We will also finalize any utility relocation plans required during construction. Our

surveying team will also work closely with the City to obtain all necessary temporary and permanent easements.

Bidding Phase Services

As indicated in the RFQ, the City will coordinate and assemble the bid documents. We realize we must work closely with the City and provide electronic copies of the scope of work, special provisions for the front-end documents and all drawings and specifications. As stipulated, we will provide one full size to scale (24x36) paper set with wet seal and sealed PDF file for the drawings and Microsoft Word for specifications and special provisions.

Phase 3: Construction Phase Services

Great River understands that City staff will handle the daily contract administration, inspection, and pay request approvals. However, we will be available to attend the pre-construction meeting, periodic site visits, answer questions during construction, review and approve shop drawings, assemble O&M manuals, and be available to meet should unanticipated problems arise. We will also participate in the final inspection and startup of the project.

VALUE ENGINEERING

Value Engineering is an important process that must be implemented at every step of the design process. Similar to QA/QC, we will evaluate our design prior to each submittal to identify possible ways to design additional value into the project. It is essential that this value engineering review be performed by a senior level engineer with relevant experience, who is not involved in the day-to-day design of this project. Their job is to identify any possible ways to create additional value, essentially challenging the design team to deliver more effective solutions. The benefit our team is that we have several senior level engineers that can fill the role of Value Engineering Coordinator (VEC). Depending on the final scope of services, we will identify and confirm the VEC in our Project Management Plan.

During design the team will coordinate with the City on the most efficient alignment that will allow future maintenance. We will also look at a combination of ductile iron pipe in areas of high congestion and high risk, and potentially C900 pipe in undeveloped areas. C900 when properly installed will provide reliable service for twenty (20) plus years and is more economical.

REFERENCES

Great River is proud to have worked for more than 75 cities, counties, and governmental bodies in Missouri. We have provided water and wastewater engineering services for many of these clients. The table below includes a representative sample of these clients for your use as references for our work.

REFERENCE	TYPE OF WORK	DATE OF LAST SERVICE
Brad Allbritton, PE, Administrator Taney County Regional Sewer District 207 David Street - Forsyth, MO 65653 417-546-7221	Wastewater	2019
Hank Flageolle, Public Works Director City of Mansfield 122 N. Business 60 417-924-7063	Wastewater	2019
Steve Bodenhamer, City Administrator City of Strafford 126 S. Washington - Strafford, MO 65757 417-736-2154	Wastewater	2019
Dan Smith, Director of Public Works City of Springfield 840 Boonville Ave. - Springfield, MO 65802 417-864-1902	Wastewater	2019
Frankie Charles, Mayor City of Urich 308 Main Street - Urich, Missouri 64788 660-638-4813	Wastewater	2019
Dave O'Conner, Public Works Director City of Willard 224 W. Jackson - Willard, MO 65781 417-742-3033	Wastewater	2019